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10/804,659

03/19/2004

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EXAMINER

PHUNG, LUAT

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/804,659

Applicant(s)

LEE ET AL.

Examiner

Luat Phung

Art Unit

2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 18 October 2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

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**DETAILED ACTION**

The pending claims 1-30 are presented for examination.

Claims 1-30 are rejected.

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Specification***

2. The disclosure is objected to because of the following informalities: page 4, line 15, correct wording of "the a number of problems occur." Appropriate correction is required.

***Claim Objections***

3. Claims 1, 5, 8 and 12 are objected to because of the following informalities.

Regarding claim 1, lines 8-9, "a mobile node" seems to refer to that previously mentioned in line 6; if so, it is suggested to change to "the mobile node".

Claims 5 and 12 recite "a second mobile IP pool"; however, there's no reference to "a first mobile IP pool" in these claims or their independent claims 1 and 8, respectively.

Regarding claim 8, line 8, it is suggested to move the limitation "Mobile Ipv4" before "address" and change to "Mobile IPv4" to be consistent with the rest of the claims.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "the mobile node" in line 1. There is insufficient antecedent basis for this limitation in the claim. It is not clear which mobile node the limitation refers to, among the three mentioned in lines 6, 8-9, and 10 of the independent claim 1.

***Inventorship***

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2, 8-9 and 15-22 are rejected under U.S.C. 103(a) as being unpatentable over Sundquist (US Pub. 2004/0136382).

Regarding claim 1, Sundquist discloses a method for assigning a mobile Internet protocol (IP) in an access node of a mobile communication system having the mobile IP, the method comprising the steps of:

assigning a first mobile IP (Mobile IPv6) address available in the access node upon receiving a request for assignment of the first mobile IP (Mobile IPv6) address from a mobile node; (para. 36, lines 8-9)

assigning a second mobile IP (Mobile IPv4) address upon receiving a request for assignment of the second mobile IP address (Mobile IPv4) from a mobile node which was assigned the first mobile IP address; (para. 36, lines 8-9) and

assigning a fifth mobile IP (Mobile IPv6) address (Fig. 3, element 300; para. 43, line 8) when a mobile node has moved from another access node to the access node (para. 43, lines 6-8).

Sundquist does not specifically disclose a mobile node that was assigned a third mobile IP (Mobile IPv6) address and a fourth mobile IP (Mobile IPv4) address. However it is inherent that the mobile node that moves is the same as that was assigned a first mobile IP (Mobile IPv6) address and a second mobile (IP Mobile IPv4) address (para. 36, lines 8-9).

Regarding claim 2, Examiner takes official notice that it is well known in the art that a mobile node first receives services through its home network, i.e., the mobile node is initially assigned a Mobile IP address by its home network.

Regarding claims 15-18, Sundquist discloses a method for transmitting data between a first mobile communication network and a second mobile communication

network in a border router of a mobile communication system utilizing a mobile Internet protocol (IP), the method comprising the steps of:

receiving a first mobile IP (Mobile IPv6) address and a second mobile IP (Mobile IPv4) address from a mobile node; (Fig. 1a and 1b; para. 36)

storing the received first mobile IP (Mobile IPv6) address and second mobile IP (Mobile IPv4) address; (Fig. 6; para. 37; para. 51, lines 3-5)

transmitting a packet using the stored mobile IP addresses when packet data transmitted from a mobile node belonging to the first mobile communication network to the second mobile communication network is received (para. 51), as recited in claim 15;

wherein the first mobile communication network performs communication using the first mobile IP (Mobile IPv6) address, as recited in claim 16; (Fig. 1a, element 102)

wherein the second mobile communication network performs communication using the second mobile IP (Mobile IPv4) address, as recited in claim 17; (Fig. 1a, element 101)

further comprising the steps of:

storing tunneling information in an IP mapping table upon receiving the tunneling information from each mobile node; (para. 37) and

transmitting packet data by tunneling based on the tunneling information, as recited in claim 18. (para. 35)

Lundquist discloses all of the subject matter except updating a third mobile IP being one of (Mobile IPv6) and (Mobile IPv4) address included in a location update message when the location update message is received from the mobile node.

However Lundquist describes when a mobile node moves to a new care-of address (para. 43, lines 7-8), the new address in the Binding Update will be updated (para. 45-47). Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to combine updating the third mobile IP address with method to assign IP addresses in the border router by updating the IP address in the Binding Update message. The motivation would have been to ensure continued connectivity when the mobile node moves and is assigned a new IP address.

Claims 8-9 are apparatus claims corresponding to claims 1-2, respectively, and are therefore rejected under the same reason set forth in claims 1-2, respectively.

Claims 19-22 are apparatus claims corresponding to claims 15-18, respectively, and are therefore rejected under the same reason set forth in claims 15-18, respectively.

6. Claims 3-7, 10-14 and 23-30 are rejected under U.S.C. 103(a) as being unpatentable over Sundquist (US Pub. 2004/0136382) in view of Flykt, et al (US 7,191,226) and Abrol, et al (US Pub. 2004/0004940).

Regarding claims 3-7, Sundquist discloses all of the subject matter as recited in paragraph 5 of this office action except the following:

further comprising the step of transmitting an extension message to the home network of the mobile node when the extension message for a Mobile IPv4 address is received from a mobile node, which has moved from the another access node, as recited in claim 3;



further comprising the step of receiving an extension message for a Mobile IPv4 address from the another access node, as recited in claim 4;

further comprising the step of, upon receiving a message requesting the second mobile IP (Mobile IPv4) address from the mobile node, extracting an available address from a second mobile IP (Mobile IPv4) pool and assigning the extracted address to the mobile node as the second mobile IP (Mobile IPv4) address, as recited in claim 5;

wherein when assigning the second mobile IP (Mobile IPv4) address, the access node drives a timer for withdrawing the second mobile IP (Mobile IPv4) address and assigns the second mobile IP (Mobile IPv4) address to the mobile terminal until expiration of the timer, as recited in claim 6;

further comprising the step of resetting a timer for withdrawing the second mobile IP (Mobile IPv4) address when an extension request signal for the second mobile IP (Mobile IPv4) address is received from the mobile node, which was assigned the second mobile IP (Mobile IPv4) address from the access node, as recited in claim 7.

Flykt from the same or similar fields of endeavor discloses:

further comprising the step of transmitting an extension message to the home network of the mobile node when the extension message for a Mobile IPv4 address is received from a mobile node, which has moved from the another access node; (Fig. 8; col. 6, lines 49-57)

further comprising the step of receiving an extension message for a Mobile IPv4 address from the another access node; (Fig. 8; col. 6, lines 49-57)

Abrol from the same or similar fields of endeavor discloses:

further comprising the step of, upon receiving a message requesting the second mobile IP (Mobile IPv4) address from the mobile node, extracting an available address from a second mobile IP (Mobile IPv4) pool and assigning the extracted address to the mobile node as the second mobile IP (Mobile IPv4) address; (Fig. 4, elements 56 and 60)

wherein when assigning the second mobile IP (Mobile IPv4) address, the access node drives a timer for withdrawing the second mobile IP (Mobile IPv4) address and assigns the second mobile IP (Mobile IPv4) address to the mobile terminal until expiration of the timer; (Fig. 4, element 58; Fig. 5, element 96; para. 35 and 40)

further comprising the step of resetting a timer for withdrawing the second mobile IP (Mobile IPv4) address when an extension request signal for the second mobile IP (Mobile IPv4) address is received from the mobile node, which was assigned the second mobile IP (Mobile IPv4) address from the access node. (Fig. 5, element 92; para. 35 and 40)

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention to combine the extension messages of Flykt and the IPv4 address management of Abrol in the method for assigning a mobile IP of Sundquist by using the extension messages to manage the pool of IPv4 addresses when a mobile node moves to another access node. The motivation for doing so would have been to efficiently manage the scarce IPv4 addresses.

Claims 10-14 are apparatus claims corresponding to claims 3-7, respectively, and are therefore rejected under the same reason set forth in claims 3-7, respectively.

Regarding claims 23-26, the limitations of these claims are substantially the same as that of claims 1-7 and 15-18 above and thus are rejected for the same rationale in rejecting claims 1-7 and 15-18.

Claims 27-30 are apparatus claims corresponding to claims 23-26, respectively, and are therefore rejected under the same reason set forth in claims 23-26, respectively.

Note: in claims 1, 5-8, 12-17, 19-21, 23, 25-27 and 29-30, the phrases "(Mobile IPv4)" and "(Mobile IPv6)" are not positively recited claim limitations since they are recited within parentheses. Therefore, the limitations of the phrase are not considered the claim limitations. However, the reference cited teaches the subject matter within the parentheses.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luat Phung whose telephone number is 571-270-3126. The examiner can normally be reached on M-Th 7:30 AM - 5:00 PM, F 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dang Ton can be reached on 571-272-3171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LP

  
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SUPERVISORY PATENT EXAMINER